LoopStar® 1600
SONET Multi-Service Transmission Platform

The LoopStar® 1600 is an advanced, next-generation SONET multi-service transmission platform that allows service providers to cost-effectively aggregate, deploy, and manage TDM and Ethernet services. With its compact design and ability to scale from an OC-3 to an OC-192 network, the LoopStar 1600 provides a low-cost, high-growth solution for adding services at the central office or at the edge of the network.

When used with the LoopStar 800 or LoopStar 810 products, the LoopStar 1600 provides a cost-effective aggregation point for multiple subtending rings. The LoopStar 1600 also can function as multiple virtual Add-Drop Multiplexers (ADMs) for hub node applications. In addition, with its versatile cross-connect architecture and high port count, this platform is an efficient alternative to existing cross-connect systems that require significantly more rack space at two to three times the cost.

Benefits:

- Aggregates and delivers TDM and Ethernet services over a single transport platform.

- Provides efficient support for point-to-point, point-to-multipoint, or multipoint-to-multipoint traffic.

- Supports network interfaces from an OC-3 to OC-192 and tributary interfaces from OC-3 to OC-48.

- Scales Ethernet services from sub 10BaseT rates up to Gigabit Ethernet using QoS in conjunction with EoS features.

- Offers modular slot design to grow the network cost-effectively and add services when required.

- Provides multiple network protection schemes including UPSR, BLSR, and LAPS.

- Prevents tributary card failures from affecting customer traffic with economical n:1 tributary card protection.

- Protects equipment (cross-connections and management) with redundant cross-connect and management cards.

- Reduces CAPEX by providing MADM and 3/1 DACS functionality in a single platform.

- Provides sufficient traffic grooming capabilities to reduce the need for costly DACs ports.

- Utilizes the same management systems as those for the LoopStar 800/810: LoopStar SONET EMS, LoopStar SONET EMS LCT, LoopStar SONET Web-based LCT.

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Features

- Software selectable network protection offers support for UPSR, BLSR, or Linear 1+1 (LAPS).

- EoS (GFP, low order VCAT, and LCAS) allows for more efficient use of SONET bandwidth without affecting the existing infrastructure.

- VLAN support with 802.1Q-in-Q allows for transparent transport of customer VLANs, simplifying the management of customer Ethernet traffic.

- Supports the following Ethernet business services: EPL, EVPL, EPLAN, EVPLAN.

- M13 and transmux support enables efficient use of network resources without sacrificing traffic routing capabilities.

- High-density support for DS1, DS3, OC-3, and OC-12 tributaries provides a cost-effective aggregation point for access networks.

- Flexible n:1 protection for DSn interfaces promotes further operational cost savings.

- 3 RU design allows for central office or customer premises deployments.

- Low power consumption (160W typical) saves on operation expenses.

- Cross-connect matrix and management function is provided on one integrated card, reducing both capital and operational expenses.

- Most tributary cards are interchangeable with the LoopStar 800, reducing spare inventory.

Space-Saving Design

The compact 3 RU (5.25" x 17" x 12") LoopStar 1600 allows for ease of installation in tight rack spaces in central office environments. As OC-48 access networks become more prevalent, this product's compact design will support customer premises applications as well.

Line Card Options

- Two card slots for management, control, and cross-connect functionality

- Eight service interface slots for network or tributary card use: OC-192 (slots 1-2 only), OC-48, OC-12, OC-3, DS3, DS1, 10/100, 100FX or Gig-E

- OC-3 line card options for 1, 2, 4, or 8 ports

- OC-12 line card options for 1, 2, or 4 ports

- All optical interfaces support UPSR, BLSR, or LAPS configurations

- Flexible DS1 and DS3 protection switching schemes, 1:4 for DS1 and 1:3 for DS3 or 1:1 for DS1 and 1:1 for DS3

- DS1 line card options for 14 or 28 ports

- DS3 line card options for 3, 6, or 12 ports

- Multiple Input/Output back-plane panels for DS1 and DS3 line card options (DS1 only, DS3 only, or DS1 and DS3 combo)

- Ethernet line card options for 8 port 10/100BT, 2 port Gig-E, or a combination of 4 port 10/100 with 1 port Gig-E

- BITS and loop timing options for redundancy

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Ordering Information

Description	Catalog Number
LoopStar 1600 Chassis Assembly	LPS-FRM1600-L1
Cross-connect & System Control & Timing Board	LPS-I1AXCS
Cross-connect & System Control & Timing Board (High Order)	LPS-IXCSSTS
OC-192 Optical Interface Unit (IR-2, LC) 40km	LPS-OC19202
OC-192 Optical Interface Unit (LS-64.2, LC) 80km, without BA	LPS-OC19203
OC-192 Optical Interface Unit (40 wavelength, 100G, G.692)	LPS-OC192W
OC-48 Optical Interface Unit	LPS-OC480x
OC-48 Optical Interface Unit (SR-1, LC)	LPS-OC4804
OC-48 Optical Interface Unit (IR-2, LC)	LPS-OC4805
OC-48 Optical Interface Unit (100KM, LC)	LPS-OC4806
4xOC-12 Optical Interface Unit	LPS-OC12Q0x
2xOC-12 Optical Interface Unit	LPS-OC12D0x
OC-12 Optical Interface Unit	LPS-OC120
8xOC-3 Optical Unit	LPS-OC30z
4xOC-3 Optical Interface Unit	LPS-OC3Q0x
2xOC-3 Optical Interface Unit	LPS-OC3D0x
OC-3 Optical Interface Unit	LPS-OC30x
2x1000Base-FX Ethernet Board (Transparent, without GE SFP module)	LPS-EGT2H
8x100Base-T Ethernet Board	LPS-EFS8
14xDS-1 Mapper Board	LPS-PLT101
28xDS-1 Mapper Board	LPS-PDT101
3xDS-3 Mapper Board	LPS-PLT301
6xDS-3 Mapper Board 1600 only	LPS-PDT301
6xDS-3 Mapper Board (Transmux)	LPS-PDM301H
12xDS-3 Mapper Board	LPS-PQT3A01
Faceplate Front	LPS-FF
56xDS1 Electrical Interface Board	LPS-PQI101
12xDS3 Electrical Interface Board	LPS-PQI301
12xDS3 Electrical Interface Board (1:1 protection only)	LPS-PQSI301
24xDS3 Electrical Interface Board MINI-BNC	LPS-POI301
28xDS1+6xDS3 Electrical Interface Board	LPS-PDI1301
Faceplate(rear) for 1600	LPS-BF
SFP 1310nm SM (10km) for Gigabit Ethernet Interface	LPS-SFP1310
SFP 1340nm SM (40km) for Gigabit Ethernet Interface	LPS-SFP1340
SFP 1510nm SM (10km) for Gigabit Ethernet Interface	LPS-SFP1510
SFP 1540nm SM (40km) for Gigabit Ethernet Interface	LPS-SFP1540
SFP 850nm MM (850m) for Gigabit Ethernet Interface	LPS-SFP85

Note: x = 1, 2, 3 (where 1 = 15 km, 2 = 40 km, 3 = 60 km)
z = requires SFPs

Specifications

Cross-connect capabilities:	768 x 768 STS-1
	336 x 336 / 2688 x 2688 VT1.5

INTERFACE CAPACITIES

TDM:	112 x DS1/Shelf
	48 x DS3/Shelf
SONET:	48 x OC-3/Shelf
	32 x OC-12/Shelf
	8 x OC-48/Shelf
	2 x OC-192/Shelf
Ethernet:	48 x 10/100 Mbps Ethernet/Shelf
	12 x Gigabit Ethernet/Shelf
Networking Topologies:	Terminal
	Linear ADM
	Ring and multi-Ring
	Mesh
Service protection:	Linear-APS
	UPSR, BLSR (Optional)
	DNI (Dual Node Interconnection)
	FSVP (Fiber Shared virtual path protection)
Equipment protection:	1+1 protection of cross-connect, system control
	and timing Dual Power feeds
	1: N (N <= 4) DS1 protection
	1: N (N <= 4) DS3 protection
Network management:	TL1, Web-based LCT
	SNMP
	LoopStar Element Management System
	IP DCC and 4 layer OSI over DCC
Ethernet features:	HDLC/X.86/GFP encapsulation
	STS-1 & VT1.5 VCAT, LCAS, 802.1Q VLAN/QinQ
	L2 switching with STP/RSTP, MPLS VPN
Power consumption:	350W (maximum load configuration)
	<150W (Typical)

PHYSICAL

Dimensions (HxWxD):	5.2" (3RU) x 17.2" x 12"
Weight:	<33 lbs (15 kg) (full configuration)
Operating Temperature:	23°F to 131°F (-5°C to 55°C)
Operating Humidity:	5% to 95%
Standards Compliances:	NEBS Level 3 Certified
	Telcordia GR-253, GR-1089 and GR-63
	UL 60950

SPEC SHEET

ISO9001 CERTIFIED